

REMARKS

Favorable reconsideration of this application is requested in view of the above amendments and the following remarks. Non-elected claims 13-15 are canceled without prejudice to or disclaimer of the subject matter recited therein. Claims 1 and 7 are amended. The revisions to claims 1 and 7 are supported, for example, at Figure 2 and at page 5, lines 12-16 in the specification. The changes made to the claims by the current amendment are attached hereto in a page entitled, "Version with Markings to Show Changes Made." Claims 1-12 are pending, with claims 1 and 7 being independent.

Claim rejections - 35 U.S.C. § 112

Claims 1-12 stand rejected as being indefinite. Applicants respectfully traverse this rejection. However, Applicants have amended claims 1 and 7 as suggested by the Examiner and, therefore, respectfully request withdrawal of this rejection.

Claim rejections - 35 U.S.C. § 102(b)

Claims 1 and 7 stand rejected as being unpatentable over U.S. Patent No. 4,378,414 (Furukawa). Applicants respectfully traverse this rejection.

Claim 1 recites a nickel metal-hydride battery that includes a separator. The separator comprises a single layer in an area between the positive electrode and the negative electrodes. The amount of electrolyte retained in the separator is at least 15 mg/cm² prior to activation. Claim 7 recites a nickel metal-hydride battery that includes a separator. The separator comprises a single layer in an area between the positive electrode and the negative electrodes. A total area of the separator and an amount of the electrolyte satisfy a specific equation prior to activation.

During self-discharge of a battery, metal ions are deposited on the separator and form a conductive path. This deposition of metal ions on the separator causes the deterioration of the self-discharge characteristics of the battery. However, maintaining a sufficient amount of electrolyte in the separator can reduce deterioration by causing the metal ions to be deposited on the positive electrode instead of the separator. See page 1, lines 25-36.

Furukawa does not disclose or suggest at least the above features of claims 1 and 7. Furukawa is directed to a zinc alkaline secondary battery in which a multi-layer separator is interposed between negative and positive electrodes. The separator layer that is adjacent to the negative electrode contains 1 to 10 mg/cm² of electrolyte. See col. 2, line 67 through col. 3, line

3. Thus, this layer does not have the amount of electrolyte recited by the claims of the present invention, and therefore, does not provide the benefits described above regarding the self-discharge characteristics of the battery. In contrast, since claims 1 and 7 are directed to a single layer separator, the layer adjacent to the negative electrode in the structure recited in those claims contains an amount of electrolyte that is higher than that disclosed in Furukawa. Thus, Furukawa does not teach or suggest a separator that comprises a single layer in an area between the positive electrode and the negative electrodes where the single layer separator retains the claimed amount of electrolyte.

Applicants therefore submit that claims 1 and 7 are allowable over the cited reference.

Claim rejections - 35 U.S.C. § 102/103

Claims 3 and 9 stand rejected as being anticipated or, in the alternative, obvious over Furukawa. Applicants respectfully traverse this rejection.

Claims 3 and 9 depend from allowable claims 1 and 7, respectively. Accordingly, Applicants therefore submit that claims 3 and 9 are also allowable over the cited reference. Applicants do not concede the correctness of this rejection.

Claim rejections - 35 U.S.C. § 103

Claims 2 and 8 stand rejected as being unpatentable over Furukawa in view of JP 05 121061A (JP '061). Claims 3 and 9 stand rejected as being unpatentable over Furukawa in view of JP 07 099050A (JP '050). Claims 4 and 10 stand rejected as being unpatentable over Furukawa in view of JP 52 070131A (JP '131). Claims 5, 6, 11, and 12 stand rejected as being unpatentable over Furukawa in view of U.S. Patent No. 4,137,379 (Schmidt). Claims 6 and 12 stand rejected as being unpatentable over Furukawa in view of U.S. Patent No. 5,032,475 (Hasebe). Applicants respectfully traverse these rejections.

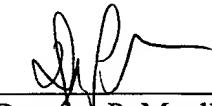
Each of claims 2-6 and 8-12 depends from claims 1 and 7, respectively. As discussed above, claims 1 and 7 are allowable over Furukawa. None of the cited references remedy the deficiencies of Furukawa. In particular, none of the cited reference teaches or suggests the combinations of features recited in claims 1 and 7, and none of the cited references achieves the benefits derived from those combinations. Accordingly, Applicants submit that claims 2-6 and 8-12 are also allowable.

In view of the above, favorable reconsideration in the form of a notice of allowance is requested.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Claims

Claims 13-15 have been canceled.

Claims 1 and 7 have been amended as follows:

1. (Amended) [An alkaline storage battery] A nickel metal-hydride battery comprising:

a case; and

a positive electrode, a negative electrode, a separator and an electrolyte that are provided in the case;

wherein a portion of the separator present between the positive electrode and the negative electrode is composed of a single layer, and

an amount of the electrolyte retained in the separator is at least 15 mg/cm² in a period, after assembling the battery, from a time the separator is impregnated with the electrolyte to [the] a time the battery is activated.

7. (Amended) [An alkaline storage battery] A nickel metal-hydride battery comprising:

a case; and

a positive electrode, a negative electrode, a separator and an electrolyte that are provided in the case;

wherein a portion of the separator present between the positive electrode and the negative electrode is composed of a single layer, and

a total area X (cm²) of the separator and an amount Y (mg) of the electrolyte satisfy a relationship of Y/ X ≥ 20 in a period, after assembling the battery, from a time the separator is impregnated with the electrolyte to [the] a time the battery is activated.